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XMTR. WORKING FOR

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RT6 TRANSMITTER MODIFICATIONS.
WORKING
FOLDER

50X1

PROJ# 2010

TABULATIONS-
CALCULATIONS.
ROUGH NOTES

DOCUMENT NO. 1
NO CHANGE IN CLASS. ☐
☐ DECLASSIFIED
CLASS. CHANGED TO: TS S (C) 2017
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SUMMARY 1-23-TO 2-5-52

RS6 - TRANSMITTER

I. ORIGINAL PLANNING TO DETERMINE EFFICIENCY OF A CONVENTIONAL COIL CONDENSER COMBINATION IN FINAL STAGE IN PLACE OF TAPPED COIL INSTALLED IN RS-6 TRANSMITTER, WITH VIEW TO FIND OPTIMUM Z. TESTS RUN WITH EXPERIMENTAL COIL SHOWED SOME IMPROVEMENT IN EFFICIENCY WITH OPTIMUM Z OF ABOUT 3200 OHMS. OVER RS-6 ORIGINAL. DUE TO EXCESSIVE FREQUENCY RANGE REQUIRED, THE CAPACITY OF THE TUNING CONDENSER WAS TOO HIGH IN THE HIGH BAND PORTION FOR PROPER L/C RATIO.

II WITH ABOVE IN VIEW IT WAS DETERMINED TO TRY SLUGGING THE INDUCTANCE SO AS TO REDUCE TURNS FOR GIVEN INDUCTANCE AND SPLIT STATOR OF TUNING CONDENSER, SO AS TO ARRIVE AT SOME RATIO OF C-L THAT WOULD BE NEAR OPTIMUM OUTPUT FOR THE HIGH BAND. WITH THIS PLUS THE METHOD OF CONTINUOUSLY VARIABLE ANTENNA TAPPING, IT WAS HOPED THAT A GREATER OUTPUT PLUS HIGHER EFFICIENCY COULD BE ATTAINED.

STAT

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RS-6 SUMMARY (PAGE TWO)

III CALCULATIONS MADE FOR TWO COILS, ONE FOR HIGH BAND, AND ANOTHER FOR THE LOW BAND, WITH SWITCHING ARRANGEMENT FOR TRANSFER OF CAPACITY TO RESPECTIVE COILS UNDERTAKEN. THESE COILS TO BE SLUGGED WITH G-1 MATERIAL FOR LOW BAND & G-7 FOR THE HIGH BAND. MECHANICAL ARRANGEMENTS FOR ACCOMODATING THE ABOVE UNDERTAKEN.

IV COMPLETED UNIT INSTALLED AND TESTS RUN IN COMPARISON WITH ORIGINAL UNIT. TESTS INDICATED THAT UNIT MORE EFFICIENT THAN ORIGINAL COIL. CONDENSER COMBINATION. SOME PHYSICAL REFINEMENTS INDICATED, FURTHER INVESTIGATION OF SYSTEM. PLANNED.

I AMONG TESTS FURTHER INDICATED WEAKNESS LIES IN OSCILLATOR STAGE WHICH HAS VERY INEFFICIENT OUTPUT ON HIGH BAND. EXPERIMENTS BEING UNDERTAKEN WITH VIEW TOWARDS INCREASING OUTPUT (I.E. DRIVE TO FINAL). A SWITCHING ARRANGEMENT WHICH EMPLOYS A SINGLE OSCILLATOR STAT COIL TAPPED TWICE FOR THREE FREQUENCY STEPS FOR ENTIRE RANGE, AND EMPLOYING ONLY A PORTION OF THE TUNING CONDENSER

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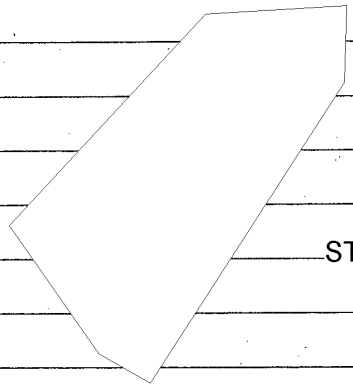
RS-6- TRANSMITTER SUMMARY (PAGE THREE)

II (CONTINUED)

FOR EACH HIGH BAND, BEING CONSTRUCTED. THIS ARRANGEMENT SHOULD GIVE BETTER L/C RATIO. FOR EACH BAND WITH RESULTING INCREASE IN OUTPUT, HENCE HIGHER OUTPUT (FINAL) IN HIGH BAND.

CONCLUSION:- TRY FOR SINGLE COIL ARRANGEMENT IN P.A. STAGE WITH COMPROMISE OF CAPACITY FOR ENTIRE RANGE, EMPLOYING CONTINUOUSLY VARIABLE ANTENNA TAP SYSTEM.

TRY 2 TAP METHOD IN OSCILLATOR FOR HIGHER DRIVE TO FINAL.



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